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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,706	09/22/2003	Dale Starkey	3833-021206 (LDEO-107)	9246
423	7590	02/15/2006	EXAMINER	
HENKEL CORPORATION THE TRIAD, SUITE 200 2200 RENAISSANCE BLVD. GULPH MILLS, PA 19406			SELLERS, ROBERT E	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/667,706

Applicant(s)

STARKEY, DALE

Examiner

Robert Sellers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-33 and 35-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-38 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/22/2003</u>  | 6) <input type="checkbox"/> Other: ____.                                    |

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9, 12-22 and 27-32 drawn to a composition comprising an epoxy component, an anhydride, an antioxidant and a phosphor material, classified in class 523, subclass 451.
  - II. Claims 10 and 11, drawn to a composition comprising an epoxy component, an anhydride, an antioxidant, a phosphor material and a polyol, classified in class 525, subclass 523.
  - III. Claims 23-26, drawn to a composition comprising an epoxy component, an anhydride and an antioxidant, classified in class 523, subclass 455.
  - IV. Claim 33, drawn to a method of preparing a molding compound, classified in class 523, subclass 453.
  - V. Claim 34, drawn to the method of Group IV further comprising mixing in a phosphor material , classified in class 525, subclass 508.
  - VI. Claims 35-37, drawn to a method of encapsulating an optoelectronic device, classified in class 264, subclass 272.13.
  - VII. Claim 38, drawn to an optoelectronic device, classified in class 385, subclass 14.

The inventions are distinct from each other because:

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2. Inventions III and (I or II or VII) are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as coating formulation and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants.

3. Inventions I and (II or VII) are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a coating composition and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants.

4. Inventions II and VII are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as an adhesive composition and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

5. Inventions (IV or V) and (I or II or III) are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another materially different product or (2) that the product as claimed can be made by another materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another materially different process such as the mixing of the epoxy component and antioxidant and, optionally, the phosphor material without partial cure.

6. The further mixing of the phosphor material and increasing the viscosity of Group V are further materially different manipulations of the molding compound prepared by the process of Group IV.

7. The methods of preparing the molding compounds of Groups IV or V involve materially different process steps from the method of encapsulation of Group VI and would not result in the encapsulated optoelectronic device of Group VII.

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8. Inventions (I or II or III) and VII are related as product and process of use.

The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can be used in a materially different process of using that product such as a method of coating a substrate.

9. Inventions VI and VII are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another materially different product or (2) the product as claimed can be made by another materially different process (MPEP § 806.05(f)). In the instant case, the process as claimed can be used to make another materially different product such as a the encapsulating of a semiconductor device.

Restriction for examination purposes as indicated is proper because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification.

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10. This application contains claims directed to the following patentably distinct species of the claimed invention:

Contingent upon the election of Group I, III, IV, V, VI or VII:

a)i) The epoxycomponents such as the triglycidyl isocyanurate of claim 7.

a)ii) The anhydrides such as the methyl hexahydrophthalic anhydride of claim 9.

b) The antioxidants such as the thiodiethylene

bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate of claim 15.

c) The phosphor materials such as the yttrium aluminum garnet of claim 17.

Contingent upon the election of Group II, items a)i), a)ii), b) and c) hereinabove and the polyols wherein a single species is elected from claim 11.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species within each of items a)i), a)ii), b) and c) hereinabove for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-38 are generic.

A reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

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Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Kirk M. Miles on January 31, 2006, a provisional election was made with traverse to prosecute the invention of Group IV, claim 34, and the species of triglycidyl isocyanurate of claims 6 and 7, the methyl hexahydrophthalic anhydride of claim 9, the thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate of claims 15 and 25, and the yttrium aluminum garnet of claim 17 as the antioxidant. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-33 and 34-38 are withdrawn from further consideration by the as being drawn to non-elected inventions.



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11. There is no distinction between the structure for the epoxy component depicted in withdrawn claim 6 and the triglycidyl isocyanurate of claim 7 since the structure is triglycidyl isocyanurate. The word "novolac" is misspelled on page 5, paragraph 23, line 6.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

12. The specification on page 8, paragraph 29, states: "In order to promote reaction of the cyclic anhydride component and the epoxy component, the anhydride ring **must be opened** [emphasis added]." Page 10, paragraph 36 and page 12, paragraph 42 further emphasize the importance of the role of the polyol in causing the reaction between the epoxy resin and anhydride. One skilled in the art cannot prepare the molding without the presence of the polyol. Pages 12-13, paragraph 42 and page 17, Example 2 describes the addition of the polyol after the cooling of the mixture at from about 45°C to about 85°C.

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13. There is no enablement for the further step in claim 34 of mixing a visible light-emitting phosphor material and conducting another increase in viscosity besides that already done in claim 33. Page 12, paragraph 41 discloses the pre-mixing of the epoxy composition comprising an epoxy resin and anhydride with an antioxidant and phosphor together as opposed to the currently claimed separate blending of the phosphor.

14. There is no affirmative inclusion of the anhydride in the epoxy composition which must be present for the mixture to undergo partial curing.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

15. How can the epoxy composition undergo a viscosity increase and partial curing without the inclusion of an anhydride and polyol as substantiated by pages 12-13, paragraphs 41 and 42? According to claim 34 referring back to claim 33 wherefrom it depends, the mixture is pre-cured in claim 33, then a phosphor is added followed by yet another viscosity increase. How can the second viscosity increase of claim 34 be achieved once the mixture has already been subjected to a partial curing in claim 33?

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16. More favorable consideration with respect to the 35 U.S.C. 112, first and second paragraphs, rejections would be given to the rewriting of claim 34 in independent form enabled by the description of pages 12-13, paragraphs 41 and 42 and page 17, Example 2, and more clearly defined as follows:

- "a) providing an epoxy composition comprising an epoxy resin and an anhydride,
- b) mixing the epoxy composition, antioxidant and light-emitting phosphor material to form a homogeneous mixture,
- c) cooling the homogeneous mixture to a temperature of from about 45°C to about 85°C and adding a polyol,
- d) heating to a temperature of from about 70°C to about 80°C for from about 10 to 30 minutes to increase the viscosity to an extent that a partially cured epoxy composition is obtained which forms a pre-reacted intermediate."

17. Claim 34 is interpreted as the "further comprising" step being applicable to step b) of claim 33 wherein the epoxy composition is mixed with both the antioxidant and phosphor prior to increasing the viscosity as set forth on page 12, paragraph 41.

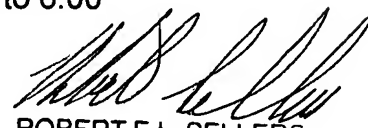
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18. The closest prior art to Japanese Patent No. 52-15539 (translation, page 3, second full paragraph) and Shaddock Patent No. 6,518,600 (col. 5, lines 16-24 and col. 6 lines 3-6 and 31-32) espouses the mixing of an epoxy resin (page 3, third full paragraph, line 2), luminescent pigment or phosphor, hardener, partially curing the mixture. The specification on pages 13-14, Examples 1 and 2 shows the criticality of the claimed method wherein the phosphor is uniformly distributed throughout the composition by increasing the viscosity before partial curing. Example 1 representative of the Japanese patent shows a non-uniform distribution of phosphor by only partial curing. However, the claims must be limited to include the suggested "cooling the homogeneous mixture to a temperature of from about 45°C to about 85°C and adding a polyol" since the viscosity increase only occurs in the presence of the polyol as corroborated by pages 13-14, paragraphs 41 and 42.

19. Parent U.S. Patent No. 6,989,412 claims a composition comprising an epoxy resin, anhydride and polyol. There is no impetus in the cited prior art to first increase the viscosity of the blend followed by partially curing the epoxy composition. Related copending application number 11/286,722 in claim 20 defines a similar method of preparation without the addition of the phosphor and the increasing of the viscosity before the partial curing step e). There is no motivation to provide for a viscosity increase prior to partial curing.

20. The remainder of the prior art was previously cited in the parent patent and is less relevant to the claimed preparation method than Shaddock and Japanese '539.

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rs 2/3/2006



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